

YOUR FINAL TASK

COMPUTER PROGRAMMING 2 (Week 9)

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GRADE & SECTION: 12 – STEM A
DATE SUBMITTED: April 2, 2022

A. Instructions: Write **True** on the blank provided if the statement is correct, otherwise, write **False**.

False 1. Classes that help handle errors in Java are called error classes.

"Error classes do not handle errors. However, exception classes make it possible through try-catch to handle unchecked and checked types of errors."

True 2. It is possible to have several `catch` blocks following a `try` block.

"We can have multiple `catch` blocks for a single `try` block. But only one `try` block is allowed"

True 3. A `try` block does not need to have a matching `catch` block.

"There are three permutations of try/catch/finally block: `try...catch;` `try...catch...finally;` and `try...finally`. Therefore, it is not necessary that each `try` block must be followed by a `catch` block. However, it must be followed by either a `catch` block or a `finally` block. And whatever exceptions are likely to be thrown should be declared in the throws clause of the method."

False 4. A `catch` block does not need to have a matching `try` block.

"It is necessary for a block to be `catch` paired with a `try` block."

True 5. Several `catch` statements following a single `try` statement should handle different exceptions.

"Every `catch` statement must handle various exceptions to avoid redundancy. Otherwise, it will return "java: exception java.lang.[type of sub-exception] has already been caught"

False 6. The `finally` statement is required after using `try` and `catch` statements.

"try-catch statement can run without being paired with `finally` block."

True 7. The block within the `finally` statement will be executed regardless of whether or not an error is encountered.

"Before the method is complete, `finally` block will always run after the `try` and any `catch` block. Therefore, `finally` block executes regardless of whether an exception is thrown or caught."

True 8. The `IOException` class handles errors that occur during input and output.

"`IOException` is a Java exception that occurs when an IO operation fails."

True 9. The `Exception` class handle all types of exceptions.

“Since `Exception` is the base class of all exceptions, it will catch any exception. `Exception` is like a 'catch all' exception handler that is a broader type of exception handler. While those sub-exception handlers such as `ArrayIndexOutOfBoundsException` is a specific type of a handler. Therefore, any exception that may get thrown is an `Exception`”

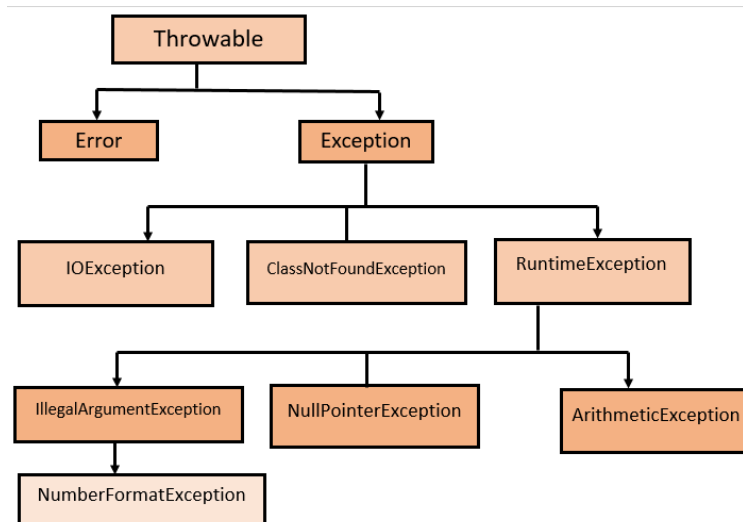


Figure 1. Types of Exceptions

False 10. Declaring `catch` blocks before a block that handles an `Exception` class to handle other types of errors would be redundant.

“`catch` blocks before an `Exception` class that will handle other unknown exceptions is not redundant. `catch` exceptions before the `Exception` class is defined for the purpose of specificity. While `Exception` class is defined in order to handle other errors that are not handled specifically.

```
1 public class test {
2     public static void main(String[] args) {
3         int[] nums = new int[5];
4         try {
5             System.out.println("Try 1");
6             nums[10] = 25;
7             System.out.println("Try 2");
8         } catch (ArrayIndexOutOfBoundsException ex) {
9             System.out.println("Catch 1");
10            //Exception that will catch other exceptions
11        } catch (Exception ex) {
12            System.out.println("Catch 2");
13        }
14    }
15 }
```

B. Instructions: Insert the missing keyword to execute code, after try catch, regardless of the result.

Problem

```
try {  
    int[] myNumbers = {1, 2, 3};  
    System.out.println(myNumbers[10]);  
} catch (Exception) {  
    System.out.println("Something went wrong.");  
} finally {  
    System.out.println("The 'try catch' is finished.");  
}
```

Solution



The screenshot shows a code editor window titled "Solution.java" with the following code:

```
1 try {  
2     int[] myNumbers = {1, 2, 3};  
3     System.out.println(myNumbers[10]);  
4 } catch (Exception e) {  
5     System.out.println("Something went wrong.");  
6 } finally {  
7     System.out.println("The 'try 'catch' is finished");  
8 }
```

C. Instructions: Give the output produced by the following code snippets.

```
1. int n = 5;  
   try {  
       n = n / 0;  
   }  
   catch (ArithmeticException e) {  
       System.out.println("Arithmetic Exception Caught");  
   }  
   catch (NumberFormatException e) {  
       System.out.println("Number Format Exception Caught");  
   }  
   finally {  
       System.out.println("Done")  
   }  
}
```

Answer:

java: ';' expected; Line #

Realistically, the provided code will result a syntax error. That is because in Line 12, in finally block, the print method has a missing semicolon. Therefore, the output that will be produced when strictly following the provided code snippet will be "java: "expected; Line 11."

Proof of Error

```
Terminal Output

1 // C1 Code Snippet
2 static void sectionC1() {
3     int n = 5;
4     try {
5         n = n / 0;
6     } catch (ArithmeticException e) {
7         System.out.println("Arithmetic Exception Caught");
8     } catch (NumberFormatException e) {
9         System.out.println("Number Format Exception Caught");
10    } finally {
11        System.out.println("Done");
12    }
13 }
14
15 /*
16
17 Terminal Output:
18 Arithmetic Exception Caught
19 Done
20
21 */
```

To alleviate the simple error, we can simply add a semicolon before the error line and the output will be:

Arithmetic Exception Caught
Done

C2 Final Answer and Proof

```
Terminal Output

1 // C1 Code Snippet
2 static void sectionC1() {
3     int n = 5;
4     try {
5         n = n / 0;
6     } catch (ArithmeticException e) {
7         System.out.println("Arithmetic Exception Caught");
8     } catch (NumberFormatException e) {
9         System.out.println("Number Format Exception Caught");
10    } finally {
11        System.out.println("Done")
12    }
13 }
14
15 /*
16
17 Terminal Output:
18 G:\Github Projects\src\fileContainers\week9.java:25:43
19 java: ';' expected;Line 11
20
21 */
```

```

2. int n = 5;
   try {
       n = n / 0;
   }
   catch (Exception e) {
       System.out.println("Exception Caught");
   }
   finally {
       System.out.println("Done")
   }

```

Answer:

java: ';' expected; Line #

The same error is encountered in this snippet from the previous snippet. However, the solution is the same.

Proof of Error



```


Terminal Output

1 // C2 Code Snippet
2 static void sectionC2() {
3     int n = 5;
4     try {
5         n = n / 0;
6     }
7     catch (Exception e) {
8         System.out.println("Exception Caught");
9     }
10    finally {
11        System.out.println("Done")
12    }
13 }
14
15 /*
16
17 Terminal Output:
18 G:\Github Projects\src\fileContainers\week9.java:25:43
19 java: ';' expected;Line 11
20
21 */

```

C2 Final Answer and Proof

Exception Caught
Done



```

Terminal Output

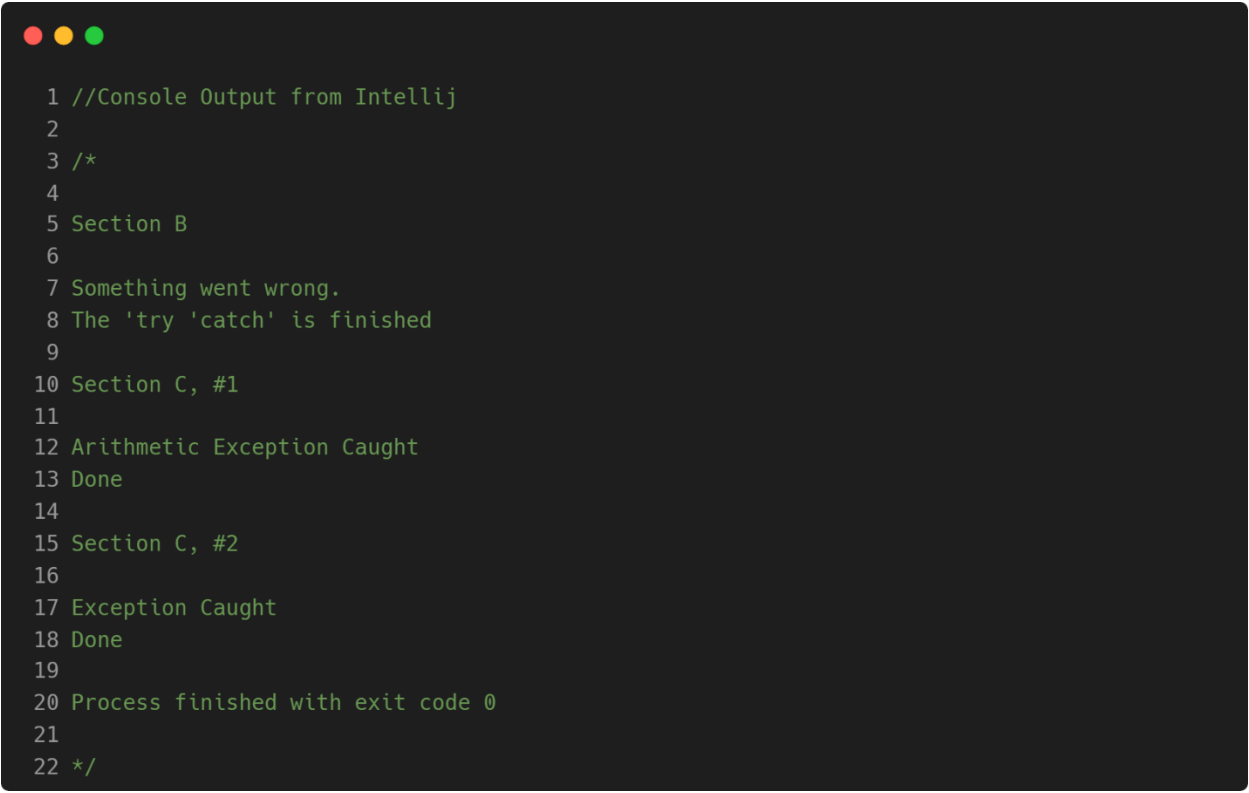
1 // C2 Code Snippet
2 static void sectionC2() {
3     int n = 5;
4     try {
5         n = n / 0;
6     }
7     catch (Exception e) {
8         System.out.println("Exception Caught");
9     }
10    finally {
11        System.out.println("Done");
12    }
13 }
14
15 /*
16
17 Terminal Output:
18 Exception Caught
19 Done
20
21 */

```

Appendix I

```
1 package fileContainers;
2
3 public class week9 {
4     static void sectionB() {
5         try {
6             int[] myNumbers = {1, 2, 3};
7             System.out.println(myNumbers[10]);
8         } catch (Exception e) {
9             System.out.println("Something went wrong.");
10        } finally {
11            System.out.println("The 'try 'catch' is finished");
12        }
13    }
14
15    static void sectionC1() {
16        int n = 5;
17        try {
18            n = n / 0;
19        } catch (ArithmeticException e) {
20            System.out.println("Arithmetic Exception Caught");
21        } catch (NumberFormatException e) {
22            System.out.println("Number Format Exception Caught");
23        } finally {
24            System.out.println("Done");
25        }
26    }
27
28    static void sectionC2() {
29        int n = 5;
30        try {
31            n = n / 0;
32        }
33        catch (Exception e) {
34            System.out.println("Exception Caught");
35        }
36        finally {
37            System.out.println("Done");
38        }
39    }
40
41    public static void main(String[] args) {
42        System.out.println("Section B\n");
43        sectionB();
44        System.out.println("\nSection C, #1\n");
45        sectionC1();
46        System.out.println("\nSection C, #2\n");
47        sectionC2();
48    }
49 }
```

Appendix II



```
1 //Console Output from IntelliJ
2
3 /*
4
5 Section B
6
7 Something went wrong.
8 The 'try 'catch' is finished
9
10 Section C, #1
11
12 Arithmetic Exception Caught
13 Done
14
15 Section C, #2
16
17 Exception Caught
18 Done
19
20 Process finished with exit code 0
21
22 */
```